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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,497	04/17/2007	Young-Jun Kwon	1203-109	6443

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HOUSTON, TX 77002

EXAMINER

GUIDOTTI, LAURA COLE

ART UNIT	PAPER NUMBER
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3727

MAIL DATE	DELIVERY MODE
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06/18/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,497	Applicant(s) KWON, YOUNG-JUN	
	Examiner Laura C. Guidotti	Art Unit 3727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04232007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 23 April 2007 has been considered, however reference JP 5051834U is not been considered as a copy of this foreign patent document has not been included.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskovich, US 5,628,082 in view of Kweon, US 6,090,488 and Trojanowski et al., US 2001/0030460.

Moskovich teaches a toothbrush comprising a toothbrush body (30) with a head part (shown in Figure 16), a first plurality of rows of bristles set in a longitudinally elongate groove and longitudinally arranged along an outer edge of the head part of the toothbrush body (88; when the bristles are mounted to the head by conventional staples there are inherently grooves or holes on the head, see Column 9 Lines 18-19, 44-45), a second plurality of rows of bristles set in a latitudinally elongate groove and longitudinally arranged on a central portion of the head part of the toothbrush body (90), wherein a length of each of the needle shaped bristles set in the outer edge of the head part is longer than a length of each of the bristles set in the central portion of the head

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part (Figure 16), each of the elongate grooves having an elliptical shape (Figure 16).

Regarding claim 5, the rows of bristles are set into grooves (Column 9 Lines 18-19) and are arranged in first and second pluralities of rows (as shown in Figure 16). Moskovich does not disclose that the bristles are needle-shaped or that the length of the first plurality of rows is longer than the second plurality of rows by 1.5 to 3.5 mm.

Kwon teaches needle-shaped bristles for a toothbrush (see Figure 4, Abstract) for being able to flexibly clean periodontal pockets between the teeth and gums and be comfortable for a user while brushing (Column 1 Lines 13-20, Column 2 Lines 28-32). Regarding claims 2 and 6, the bristles have end points from 0.01 to 0.03 mm in thickness (Figure 4) and tapers from 5 to 12 mm in length (Figure 4).

Trojanowski et al. teach first and second pluralities of rows of bristles (6-10), wherein a length of each of the bristles set in the outer edge of the head part (in rows 6 and 10) is longer than a length of each of the bristles set in the central portion of the head (in rows 7-9) by 1.5 to 3.5 mm (paragraph 9) so that the toothbrush can effectively access and clean the subgingival regions between the teeth and gum line (paragraph 45).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the bristles of Moskovich to be needle-shaped, as Kwon teaches, so as to provide bristles that can comfortably clean a users teeth and gums, and further it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the lengths of each of the bristles of Moskovich so that the ones at the outer edge of the head are longer than the bristles set in a central portion of the head by 1.5-

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3.5 mm, as Trojanowski teaches, so that the outer rows of tufts can access and clean the subgingival regions of the teeth while brushing ones teeth.

3. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskovich, US 5,628,082, Kweon, US 6,090,488, and Trojanowski et al., US 2001/0030460 as applied to claim 1 in view of Oishi et al., US 5,799,353.

Moskovich, Kweon, Trojanowski et al. disclose all elements mentioned above, however Moskovich fails to specifically disclose major and minor axis dimensions for the elongate groove.

Oishi et al. teaches an elliptical elongate tuft set in a groove (5), the major axis W is 4.6 mm in length and the minor axis (D) is 1.6 mm (Column 9 Lines 36-39), the tuft provides stiffness while effectively removes plaque and maintains durability of the tuft (Column 12 Lines 51-54, Column 13 Lines 1-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the dimensions of the major and minor axis of the elongated groove of Moskovich, Kweon, and Trojanowski et al. to be in the range of 2.5-5.0 mm and 1.6-2.5 mm as Oishi et al. teach, in order to provide a tuft dimension that can effectively remove plaque without damaging gingiva and yet remain stiff and durable.

4. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskovich, US 5,628,082, Kweon, US 6,090,488, and Trojanowski et al., US 2001/0030460 as applied to claim 1 in view of Kaneda et al., US 6,088,869.

Moskovich, Kweon, Trojanowski et al. disclose all elements mentioned above, however do not disclose that the bristles are folded and set in the grooves so that there

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is a height difference of 0.5 to 1.5 mm between both ends of the folded needle-shaped bristle. It is noted that Moskovich recognizes that the bristles of the tufts are set in a conventional stapled (folded) manner to the head (Column 9 Lines 18-19).

Kaneda et al. teach that each of the needle-shaped bristles are folded in an asymmetric U-shaped manner so that the exposed ends of the bristles have a height difference of 0.5 to 1.5 mm (Figures 1-2, Column 7 Lines 18-21) so that one end of the bristle is able to enter interproximal and periodontal areas to scrape plaque while the other end can simultaneously remove dental plaque accumulated on the surface of the teeth and gums.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the toothbrush of Moskovich, Kweon, and Trojanowski et al. by setting the bristles into the grooves by folding them so that there is a height difference of 0.5 to 1.5 mm between both ends of the folded bristle, as Kaneda et al. teach, so that each bristle is able to provide two ends that serve two different purposes in cleaning.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Guidotti whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Wednesday, 6am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura C Guidotti/
Primary Examiner, Art Unit 3727

lcg